NATIONAL PETROLEUM COUNCIL

COMMITTEE ON NATURAL GAS

Progress Report

May 16, 2003

By letter dated March 13, 2002, Secretary of Energy Abraham requested the National Petroleum Council (NPC) to undertake a new study on natural gas markets in the 21st century that would update the NPC's 1992 and 1999 reports on the subject. Specifically, the Secretary stated:

> Such a study should examine the potential implications of new supplies, new technologies, new perceptions of risk, and other evolving market conditions that may affect the potential for natural gas demand, supplies, and delivery through 2025. It should also provide insights on energy market dynamics, including price volatility and future fuel choice, and an outlook on the longer-term sustainability of natural gas supplies. Of particular interest is the Council's advice on actions that can be taken by industry and government to increase the productivity and efficiency of North American natural gas markets and to ensure adequate and reliable supplies of energy for consumers.

(The complete text of the Secretary's request letter can be found in the "Natural Gas" section of the NPC web site.)

STUDY ORGANIZATION

The Council's first step in responding to the Secretary's request for advice was to establish a Committee on Natural Gas to supervise a new study on this topic and the preparation of a draft report for the Council's consideration. The Committee, in turn, established a Coordinating Subcommittee to assist it in its duties and, with the Subcommittee's advice, determined an overall organizational framework to conduct the study analyses:

- Committee
- Coordinating Subcommittee
- Task Groups/Subgroups:
  - Demand Task Group
    - -- Economy & Demographics Subgroup
    - -- Power Generation Subgroup
    - -- Industrial Utilization Subgroup
    - -- Commercial & Residential Subgroup
  - Supply Task Group
    - -- Resource Assessment Subgroup
    - -- LNG Subgroup
    - -- Arctic Transportation Subgroup
    - -- Technology Subgroup
    - -- Environmental/Regulatory/Access Subgroup

- Transmission & Distribution (Midstream) Task Group
  -- Transmission Subgroup
  -- Storage Subgroup
  -- Distribution Subgroup
- Financial Team
- Integration Team
- Communications Team

The Committee, Coordinating Subcommittee, and Task Groups are led by industry chairs and government cochairs. The members of the various study groups are drawn from NPC members' organizations as well as from numerous other industries, groups, and government organizations with involvement in natural gas. The study participants represent broad and diverse interests including large and small producers, transporters, distributors, service providers, financers, regulators, and consumers of natural gas. In addition, significant computer modeling and data support is being provided by outside contractors.

SCOPE OF STUDY

At the study's outset, the Committee, with the assistance of the Coordinating Subcommittee, developed a scope for the project. The study is to evaluate North American natural gas supply, demand, and infrastructure issues through 2025. The study is to evaluate both near-term and long-term issues, and specifically is to examine conventional and non-conventional natural gas supplies, as well as other potential supply sources, the outlook for gas-fired power generation to meet future electricity demand, the impact of fuel switching, and the infrastructure needed to meet long-term gas demand.

Specifically, the study is to:

- Collect key supply, demand, and operational data and build the tools necessary to quantitatively assess the supply/demand balance and industry performance requirements to 2025.
- Review actual outcomes versus projections of the 1999 NPC Natural Gas study and incorporate learnings into future work.
- With respect to Supply:
  - Comprehensively review the U.S. and Canadian resource base, as well as potential resources from Mexico, applying economic and commercial criteria to establish a view of producible resources.
  - Develop an updated view of production capacity and production decline rates and industry's ability to meet near-term supply requirements.
  - Evaluate potential additional sources of supply and their likely contribution (e.g., LNG, Arctic gas), given the long lead-time and magnitude of investments required for sustainable supply.
  - Assess feasibility of the activity levels and capital required to bring on new supplies and maintain deliverability of conventional resources.
  - Assess the environmental and regulatory outlooks and their impact on development, including the effect of limitations on access to resources.

- With respect to Demand:
  - Assess North American gas demand under a range of economic growth scenarios.
  - Evaluate elasticity of demand to price and the effect of price volatility, particularly on industrial users.
  - Focus on the likely growth rates for electric power generation and the expected contribution from gas, coal, and nuclear, including the impacts of changing environmental standards, advancing technology, and infrastructure reliability.
  - Assess outlook for electricity deregulation and its impact on gas and electricity demand.
  - Assess current and future fuel switching capabilities including the potential contributions from alternate energy sources and renewables.
  - Assess the environmental and regulatory outlooks and their impact on energy and demand growth, including the effect of limitations on access.
- With respect to the Midstream:
  - Evaluate the adequacy of existing and planned gas pipelines, storage, and distribution networks and the potential for new infrastructure development.
  - Assess key intra-regional distribution system requirements.
  - Assess pipeline transmission capacity requirements for new supply sources such as Arctic gas and LNG.
  - Assess outlook for permitting new LNG terminals, and realistic timing for available capacity.
  - Evaluate the impact of growing independent power producers' (IPP) gas demand on the gas delivery infrastructure and its ability to meet peak demands in regions of tight supply.
  - Evaluate the interrelationship between the nation's gas pipeline network and the power grid.
  - Evaluate the impact of changing energy trading markets.
  - Assess the environmental, pipeline safety, and regulatory outlooks and their impact on infrastructure and access.
- Assess impacts of market volatility on supply and infrastructure development, and demand growth.
- Assess contribution of advancing technology on supply, demand, and infrastructure.
- Provide advice on actions that can be taken by industry and government to increase the productivity of the natural gas markets and ensure adequate reliable supplies.
  - Evaluate regulatory, legal, and legislative issues and initiatives and their impact on the industry's ability to respond to the nation's growing energy needs.
  - Evaluate interagency efforts to facilitate better communications and reduce overlapping responsibilities in order to accelerate the review and approval process for energy-related projects.

STUDY TIMETABLE AND PROGRESS

It was originally estimated that from the time the study groups were in place (September 2002), it would take approximately 12–15 months to conduct the study analyses and prepare a draft report for the Council's consideration, with additional time potentially required for final documentation and communication of report results. Due to the importance of the policy issues being addressed, both government and industry have encouraged the expeditious completion of the study. The study participants have responded with an extremely strong commitment of time and resources and the Committee now expects to present its proposal for a final report to the Council in September 2003.

Principal study activities and their timing are:

2002

- Aug. – Oct.: Organize and staff study work groups. Develop study scope.
- Sep. – Dec.: Choose study support contractors, reconcile recent history with 1999 projections, communicate study process to Canadian and Mexican governments, Canadian industry, and trade associations, conduct resource, technology, and demand workshops, conduct non-model analyses, and develop initial model input assumptions.

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- Jan. – Apr.: Complete workshops, finalize non-model analyses, finalize model input assumptions, conduct initial and refined base case model runs, develop report outline, begin drafting non-model result support sections of report, and continue communication of study process to outside groups.
- May – Jun.: Review progress with Committee and Council, complete base case model runs, conduct alternative and sensitivity case model runs, conduct final data analysis, finalize report cases, prepare draft of summary report including proposed findings and recommendations, complete drafts of task group report volumes, and develop report communications plan.
- Jul. – Sep.: Coordinating Subcommittee finalizes draft of summary and task group report volumes, Committee reviews and modifies drafts for submittal to the Council as proposed final report, Council meets and votes on adopting the draft report as its response to the Secretary's request for advice.
- Sep. – Dec.: Study participants provide requested briefings on the study to the government, press, industry, consumer, and professional groups.